



UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WISCONSIN

DOCKET
NUMBER

237

APR 22 1999

SURGICAL ACUITY, INC.,

Plaintiff,

v.

GENERAL SCIENTIFIC CORP.,

Defendant.

JUDGMENT IN A CIVIL CASE

JOSEPH W. SKUPNIEWITZ, CLERK

Case Number 98-C-457-S

This action came before the court and a jury with DISTRICT JUDGE JOHN C. SHABAZ presiding. The issues have been tried and the jury has rendered its verdict.

IT IS ORDERED AND ADJUDGED

THAT JUDGMENT IS ENTERED IN FAVOR OF PLAINTIFF SURGICAL ACUITY, INC. AGAINST DEFENDANT GENERAL SCIENTIFIC CORP. DECLARING THAT UNITED STATES PATENT NUMBER 5,667,291 IS INFRINGED BY SAID DEFENDANT WHO TOGETHER WITH THOSE IN PRIVITY WITH IT ARE PERMANENTLY ENJOINED FROM FURTHER INFRINGEMENT OF SAID '291 PATENT AND THAT PLAINTIFF IS AWARDED FROM SAID DEFENDANT \$274,410.00 WHICH INCLUDES \$91,470.00 FOR WILLFULLNESS, PREJUDGMENT INTEREST AND COSTS.

Approved as to form this 21st day of April, 1999.

JOHN C. SHABAZ
DISTRICT JUDGE

Joseph W. Skupniewitz, Clerk

by Deputy Clerk

Woods,
Cole, Posa, Hetzler
22 April 99.
L. Jensen

APR 22 1999

Date



UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

SURGICAL ACUITY, INC.,
d/b/a Orasoptic Research, Inc.,
a Delaware corporation,

Plaintiff,

v.

GENERAL SCIENTIFIC CORPORATION,
a Michigan corporation,

Defendant.

GENERAL SCIENTIFIC CORPORATION,
a Michigan corporation,

Counter-Plaintiff/Defendant,

v.

SURGICAL ACUITY, INC.,
d/b/a Orasoptic Research, Inc.,
a Delaware corporation,

Counter-Defendant/Plaintiff.

Case No. 98-C-0457-S

Hon. John C. Shabaz

DEFENDANT'S ANSWER,
AMENDED AFFIRMATIVE DEFENSES,
AMENDED COUNTERCLAIM
AND DEMAND FOR JURY TRIAL

RECEIVED

NOV 17 1999

TECHNOLOGY CENTER 2800

RECEIVED

SEP 15 1999

TECHNOLOGY CENTER 2800

ANSWER

AS ITS ANSWER, Defendant responds as follows, with each numbered paragraph corresponding to those of Plaintiff's Complaint:

1. Defendant admits that Surgical markets equipment for use by medical and dental professionals. Defendant lacks sufficient information to form a belief with respect to all others allegations contained in this paragraph, and leaves Plaintiff to its proofs.

2. Admitted.

3. Admitted.

4. Defendant admits that on September 16, 1997, U.S. Patent No. 5,667,291 issued, and that a copy of this patent is attached to Plaintiff's Complaint as Exhibit A. Defendant lacks sufficient knowledge to form a belief with respect to all other allegations contained in this paragraph, and leaves Plaintiff to its proofs.

5. Denied.

6. Denied.

AMENDED AFFIRMATIVE DEFENSES

1. By virtue of conduct by the applicant before the U.S. Patent and Trademark Office resulting in the issuance of U.S. Patent No. 5,667,291, Plaintiff is estopped to assert that Defendant infringes this patent.

2. By virtue of the existence of relevant prior art, Plaintiff may not assert that Defendant infringes U.S. Patent No. 5,667,291.

3. U.S. Patent No. 5,667,291 patent is invalid because the alleged invention claimed therein fails to meet one or more of the conditions for patentability as specified in Title 35 of the United States Code, including, but not limited to, §§ 102, 103 and/or 112.

4. U.S. Patent No. 5,667,241 is unenforceable due to inequitable conduct on the part of Plaintiff in failing to disclose relevant prior art during the prosecution of this patent before the U.S. Patent and Trademark Office.

AMENDED COUNTERCLAIM

The Parties

1. Counter-Plaintiff/Defendant General Scientific Corporation is a Michigan corporation that designs, manufactures, and markets optical devices for use by medical and dental professionals.

2. According to Plaintiff's Complaint, Counter-Defendant is a Delaware corporation that designs and markets surgical illumination devices.

Jurisdiction

3. Jurisdiction with respect to this Counterclaim is conferred on this Court by virtue of 28 U.S.C. §§ 1331 and 1338. Venue is proper under 28 U.S.C. §§ 1391 and 1400.

COUNT I

(Declaratory Judgment of Patent Invalidity and Noninfringement of U.S. Patent No. 5,667,291)

4. Upon information and belief, Counter-Defendant is the owner of U.S. Patent No. 5,667,291, entitled "Illumination Assembly for Dental and Medical Applications," a copy of which is attached to Plaintiff's Complaint as Exhibit A.

5. Based upon the allegations contained in Plaintiff's Complaint, there is a substantial and continuing judicable controversy between Plaintiff/Counter-Defendant and Defendant/Counter-Plaintiff as to Counter-Defendant's right to threaten or maintain suit for infringement of the '291 patent, and as to the validity and scope thereof, and as to whether Counter-Plaintiff's conduct infringes any valid claim of the '291 patent.

6. The '291 patent is invalid and void on one or more of the following grounds:

(a) The alleged invention of the '291 patent was known or used by others in this country or patented or described in a printed publication in this or a foreign country before the alleged invention thereof by applicant for said patent;

(b) The alleged invention of the '291 patent was patented or described in a printed publication in this or a foreign country, or in public use, or on sale in this country more than one year prior to the date of the application for said patent in the United States;

(c) The differences between the subject matter sought to be patented in the claims of the '291 patent and the prior art are such that the subject matter of said claims as a whole would have been obvious at the time the alleged invention was made to a person having ordinary skill in the art to which said subject matter pertains;

(d) The specification of the '291 patent does not comply with the disclosure requirements of 35 U.S.C. §112; and

(e) The claims of the '291 patent do not particularly point out and distinctly claim the subject matter of the alleged invention.

7. Counter-Plaintiff does not infringe any of the claims of the '291 patent, either literally or under the doctrine of equivalents.

8. The claims of the '291 patent were initially rejected by the Examiner over the prior art. The claims were amended during prosecution to include the limitation of an "aspheric" lens to overcome this rejection. Exhibit B.

9. Individuals associated with the filing or prosecution of a U.S. patent are under an affirmative duty to disclose information material to patentability. 37 CFR § 1.56. Accordingly, any information pertaining to the use of an aspheric lens in an illumination

assembly for medical or dental applications would be considered material to the patentability of the claims of the '291 patent.

10. The use of aspheric lenses is notoriously well known in the field of medical and dental illumination. Various patents and other references containing material information were available to Counter-Defendant during the prosecution of the '291 patent, including U.S. Patent No. 5,440,462 owned by Counter-Plaintiff, but these materials were not submitted to the U.S. Patent Office and were therefore not considered during prosecution of the '291 patent. Counter-Defendant should have been aware of at least certain of this prior art and, to the extent it had actual knowledge of such materials, breached its duty of candor by failing to submit the same to the U.S. Patent Office.

11. In addition to U.S. Patent No. 5,440,462 owned by Counter-Plaintiff, which describes the use of an aspheric lens in an illumination assembly for medical and dental applications, at least the following additional patents, none of which were cited during prosecution of the '291 patent, contain information material to the patentability of the '291 patent: 3,666,180; 4,274,128; 4,952,040; 4,718,744; and 5,485,316.

12. Several competitors of Counter-Defendant also began marketing and selling medical and dental illuminators incorporating aspheric lenses prior to the issuance of the '291 patent. Counter-Defendant was aware of the commercial use of aspheric lenses in illumination assemblies for medical and dental applications during the prosecution of the '291 patent, but failed to bring this information to the attention of the U.S. Patent Office, thereby breaching its duty of candor. These competitors of Counter-Defendant include Heine Optotechnik, which began selling a fiber-optic-based, head-mounted illuminator (the MD

300/350 F.O.) incorporating an aspheric lens prior to 1990 (Exhibit C), and WelchAllyn, which introduced a fiber-optic-based, medical/dental illuminator in 1993 (Exhibit D).

13. Counter-Defendant also acquired competitive products incorporating aspheric lenses for evaluation purposes prior to the issuance of the '291 patent. Counter-Defendant did not bring this information to the attention of the Patent Office, thereby breaching its duty of candor.

PRAYER FOR RELIEF

WHEREFORE, Defendant/Counter-Plaintiff General Scientific Corporation demands judgment against Plaintiff/Counter-Defendant Surgical Acuity, Inc. as follows:

- A. That Plaintiff's claim for relief be dismissed with prejudice;
- B. That Plaintiff take nothing by its Complaint;
- C. That U.S. Patent No. 5,667,291 is invalid and unenforceable.
- D. That judgment be entered that Plaintiff is without right or authority to threaten or maintain suit against Defendant or its customers or licensees for alleged infringement of U.S. Patent No. 5,667,291.
- E. That U.S. Patent No. 5,667,291 is not infringed or contributorily infringed by Defendant or its customers, licensees or dealers because of the making, selling or licensing of any apparatus or technology sold or licensed by Defendant.
- F. That judgment be entered that U.S. Patent No. 5,667,291 is enforceable because of inequitable conduct by Plaintiff in the procurement of this patent.
- G. That a preliminary and permanent injunction be entered enjoining Plaintiff, its officers, agents, servants, employees and attorneys, and those persons in active concert or

participation with it who receive actual notice thereof from (a) initiating infringement litigation and (b) threatening Defendant or any of its customers, dealers, agents, servants or employees, or any prospective or present sellers, dealers or users of Defendant's products or technology with infringement litigation or charging any of them, either verbally or in writing, with infringement of U.S. Patent No. 5,667,291.

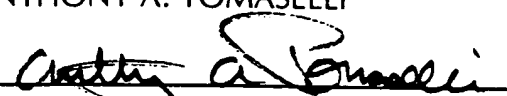
- H. That an award of attorneys' fees and costs be entered in favor of Defendant; and
- I. That such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, Defendant/Counter-Plaintiff, General Scientific Corporation, hereby demands a trial by jury of all issues triable in this action.

Respectfully submitted this 25th day of August, 1998.

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Serial No.: 08/447,357

Filing Date: 5/23/95

Applicant: Caplan, Bushroe

Title: ILLUMINATION ASSEMBLY FOR DENTAL AND MEDICAL APPLICATIONS

Group Art Unit: 346

Examiner: S. Husar

Attorney Docket: 29853.001(F)

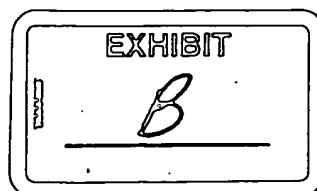
COMMUNICATION TO EXAMINER

Dear Mr. Husar:

The following materials should help expedite the telephone interview we currently have scheduled for Friday, September 13 at 2:00 PM EST/1:00 PM CST. Please feel free to call me at (608) 828-0722 if you have any questions prior to the interview; I am generally available at that number from 6 AM-5 PM (CST). On Thursday, I will be available at (608) 274-6737 all day, save for approximately 9 AM-11 AM and 2:30-4:00 PM (CST).

For your convenience, following is a copy of all claims as submitted, with all proposed amendments, cancellations, and new claims indicated. Claims which are not presently being considered for amendment or cancellation include no notation as to their status, but are nevertheless included for your convenience.

1. [AMENDED] An illumination assembly comprising:
 - a. a light guide having an output end and an input end, the input end being adapted for connection to a remote illumination source;
 - b. a housing having a light guide opening and an illumination opening, the output end of the light guide extending within the housing and being aligned to illuminate the illumination opening;
 - c. [a single optical element within the housing, the optical element being] an aspheric lens mounted within the illumination opening; and
 - d. attachment means for removably attaching the housing to headgear.
2. [CANCELED] The illumination assembly of claim 1 wherein the optical element is a positive lens.
3. [CANCELED] The illumination assembly of claim 2 wherein the optical element has a curved face located opposite the output end and an opposing generally planar face.
4. [CANCELED] The illumination assembly of claim 3 wherein the curved face is aspheric.
5. [AMENDED] The illumination assembly of claim 1 wherein the [optical element] aspheric lens has a diameter of less than 2 centimeters.
6. [CANCELED] The illumination assembly of claim 1 wherein the optical element consists of one of the following: a refractive lens, binary optic means, and a holographic optical element.



7. The illumination assembly of claim 1 wherein the light guide comprises a fiberoptic bundle.
8. The illumination assembly of claim 1 wherein the light guide has a diameter of less than 3 millimeters.
9. The illumination assembly of claim 1 wherein the housing includes a housing base telescopically engaged to the housing, wherein the output end of the light guide is attached to the housing base to provide an adjustable relationship between the output end and the aspheric lens.
10. The illumination assembly of claim 1 in combination with eyeglasses, wherein the attachment means is removably attached to the eyeglasses.
11. The illumination assembly of claim 1 in combination with binocular telescopes, wherein the attachment means is removably attached to the binocular telescopes.
12. The illumination assembly of claim 1 wherein the housing includes an attachment bevel for filter attachment surrounding the illumination opening.
13. The illumination assembly of claim 1 wherein the light guide opening and the illumination opening are both generally circular and are coaxial.
14. [AMENDED] An illumination assembly comprising:
 - a. a light guide having an output end and an input end, the input end being adapted for connection to a remote illumination source;
 - b. a housing having a light guide opening and an illumination opening, the output end of the light guide extending within the housing and being aligned to illuminate the illumination opening;
 - c. [a positive lens mounted in the illumination opening, the positive lens having a curved face adjacent the output end and an opposing generally planar face] an aspheric lens mounted in the illumination opening; and
 - d. attachment means for removably attaching the housing to headgear.
15. [CANCELED] The illumination assembly of claim 14 wherein the curved face is aspheric.
16. The illumination assembly of claim 14 wherein the housing includes a housing base telescopically and rotationally engaged to the housing, and wherein the output end is attached to the housing base to provide an adjustable relationship between the output end and the housing.
17. [AMENDED] The illumination assembly of claim 14 wherein the attachment means comprises a clip [is] pivotally mounted to the housing.

18. An illumination assembly comprising:
- a housing having an interior surface bounded by a light guide opening and an illumination opening;
 - a housing base telescopically and rotatably engaged to the interior surface of the housing, the housing base being adapted to support a light guide to illuminate the illumination opening;
 - a positive lens mounted in the illumination opening, the positive lens including an aspheric face adjacent the housing base and an opposing generally planar face; and
 - attachment means, pivotably attached to the housing base, for removably attaching the housing base to headgear.
19. The illumination assembly of claim 18 having a mass of less than 10 grams.
20. The illumination assembly of claim 18 having a maximum dimension of less than 2 inches.
21. [NEW] The illumination assembly of claim 9 wherein the housing includes a helical groove therein, and a key riding within the helical groove.

In a formal response, it is possible that additional dependent claims may be added as well.

DISCUSSION

Claims 1 and 14 now recite the use of particular lenses (e.g., an *aspheric* lens) in combination with one or more fiberoptic cables. This matter is already recited by claim 18. We believe that the *Li et al.* reference neither teaches nor suggests such a combination or the advantages it provides. Before discussing the novelty and nonobviousness of the Applicant's claimed assembly in detail at part (3) below, we believe it will be helpful to present both (1) a comparison between the illuminator disclosed by *Li et al.* and the Applicant's illuminator, and (2) a discussion of the advantages of the Applicant's illuminator over the *Li et al.* illuminator.

1. Comparison between the *Li et al.* illuminator structure and the Applicant's illuminator structure:

Fiberoptic Cables:

Li et al. state that they use a single fiberoptic having a solid core of approximately 0.48 mm (col. 3, lines 44-47, col. 6, lines 40-42, and col. 10, lines 22-24) and a numerical aperture of 0.68 (column 6, lines 46-49). A diameter of less than 1.0 mm is also stated to be desirable (col. 6, lines 55-60). It should be noted that a cable having a diameter of 0.48 - 1.0 mm would be extremely stiff, and rather easy to break if bent; this is likely one reason why the jacket 20 (shown in Figures 1 and discussed at column 6, lines 23-32) is included. The passages at column 13, lines 15-35 are also somewhat telling in this respect.

Li et al. do also note that a fiberoptic bundle may be used with the *Li et al.* illuminator; see, e.g., column 7, lines 21-27 and column 9, lines 51-53. However, they also note that unless the overall diameter of the bundle is less than or equal to the recommended amount (1.0 mm), use of bundled cables will require (1) a bulkier lens with greater diameter (column 2, lines 32-41), and (2) a much longer illuminator because the distance *df* between the fibers and the lens must be increased (column 9, lines 30-37 and column 9, lines 48-59). Note particularly column 9, lines 30-37, where it is stated that "projection systems with movable lenses, to our knowledge, have not been utilized in the prior art due to the fact that the large diameters of the fiberoptic bundles necessarily used in the prior art to provide sufficient light to the working field required the fiber-lens distance *df* be substantially large in order to achieve relatively small fields of illumination." (It is important to note that the distance *df* is a major factor, if not the most important factor, in determining the overall size of an illuminator.)

The Applicant's illuminator: The application notes that the preferred fiberoptic bundle has an overall (core) diameter of 2 mm and a numerical aperture of 0.5 or greater (page 12, line 29-page 30, line 1).

Lenses/Optical Systems:

The specific lenses suitable for the *Li et al.* illuminator are discussed at column 11, lines 5-36. It is noted that an "ideal field lens" would have a diameter of approximately 22 mm and a focal length of approximately 11 mm. *Li et al.* then note that a "preferred" lens is an achromatic field lens having a diameter of 10 mm and a focal length of 20 mm. It is further noted that this achromatic lens allows a distance *df* between the lens and the end of the fiber equal to 11-18 mm.

It is important to note that an achromatic lens (or "achromat") is actually a combination of two or more spherical lenses having different focal lengths at different wavelengths to account for chromatic aberration (i.e., it corrects for color irregularities in the spot, generally at the spot edges). Generally, one lens is made of crown glass and another is made of flint glass, and they are cemented together directly or with an air space between them. They can be formed from two lenses having the same type of glass, but these require a significant air space between them. Because an achromatic lens is formed of at least two separate lenses, it is generally quite thick, and it is also generally more expensive than an integral lens (i.e., a molded single lens).

Li et al. also comment that different optics can be used in the *Li et al.* illuminator (col. 11, lines 39-54). However, these comments do not teach or suggest an aspheric lens, much less any lens other than an achromat lens, as will be discussed below at part 3.

The Applicant's illuminator: The application notes the use of an aspheric lens to provide good spot size and intensity with a small, lightweight lens (page 11, lines 13-22). The lens has an 18 mm diameter, a center thickness of 7.4 mm, an edge thickness of 3.3 mm, and focal distances of 15 and 10.1 mm. From the dimensions given at page 11, lines 5-7 and 19-22, the maximum distance *df* between the lens and the fiber ends is 0.47 inches (11.9

mm), making the minimum distance of approximately 0.27 inches (6.9 mm) taking into account a 0.2 inch telescoping distance (page 8, lines 3-5 and page 18, lines 14-28).

An aspheric lens (or "asphere") does not account for chromatic aberration as an achromatic lens does, though it does correct for spherical aberration (i.e., it may lead to a more uniform light distribution and sharper spot edges).

Results:

At column 11, lines 5-36, it is noted that the *Li et al.* illuminator is intended to deliver spot sizes ranging between 10 mm and 100 mm at 286 mm (11.3 in.) from the object being viewed.

The Applicant's illuminator: The results of the use of the aspheric lens are noted at page 18, lines 14-28: a spot of 1 inch (44.5 mm) to 2 inches (69.9 mm) at 12 inches from the object, with the length of the illuminator ranging from 1.6 inches (40.6 mm) to 1.8 inches (45.7 mm) (page 8, lines 3-5 and page 18, lines 14-28).

Overall Size:

The "projection system" of the *Li et al.* illuminator is stated to have an overall length of 32 mm (column 11, lines 32-36). This does not appear to include the jacket 20 for the cable shown in Figures 1 and discussed at column 6, lines 23-32.

The Applicant's illuminator: The illuminator has a minimum length of 1.6 inches (41 mm), or 1.8 inches (46 mm) when telescoped to maximum length (page 8, lines 3-5). No jacket is necessary for the cable(s) used in the Applicant's illuminator because where a bundle is used (as discussed above), the cables are flexible enough that there is no need for stress protection.

2. Advantages of the claimed invention

The advantage of the claimed invention over the prior art is that the aspheric lens allows the claimed illumination assembly to utilize fiberoptic cables (or bundles) having much greater diameter than those that can be accommodated by the *Li et al.* device and other prior art devices, without making any sacrifices in terms of the df (and thus overall size) of the illuminator. The use of larger-diameter cables/bundles in turn allows the illuminator to use higher-power illumination sources, or to use illumination sources of lower magnitude with greater transmission efficiency. In short, a brighter spot can be delivered by an illuminator having similar (or even smaller) size.

(It is well recognized in the art that more cables, or greater cable diameters, can carry more light; see, e.g., page 16, lines 18-22 of the application. *Li et al.* acknowledges as much at column 1, lines 43-48, where it is stated that "use of a bundle of fibers having a relatively large combined diameter of typically 3-5 mm is required to enable an adequate amount of light to be coupled into the delivery cable so as to illuminate the surgical field with a sufficient amount of light." It should also be noted that the Figures of *Li et al.* disclose use of a xenon short-arc lamp as an illumination source; these are extremely bright, but cost approximately \$800-\$1000. As noted at page 17 of the Applicant's disclosure, a 150 W light

source is suitable for use in the Applicant's assembly. These cost approximately \$150-\$200.)

It should additionally be noted that advantages are achieved where a fiberoptic bundle is used rather than a single cable. A fiberoptic bundle is significantly more flexible and durable than a solid core cable. It is well known in the art that fiberoptics have limited flexibility and are prone to breakage; see, e.g., page 13, lines 5-9. This is especially true when the fiberoptics are as thick as the 0.48 mm cable used by Li et al.. Use of a single fiber in medical applications is risky because the fiber is most likely to break during use, that is, during a medical operation. If this occurs, the illuminator will either cease working or will suffer drastic impairment of function, with potentially disastrous results for the patient.

3. Novelty and nonobviousness of the claimed invention

We submit that Li et al., both alone and in combination with the prior art, does not teach or suggest the Applicant's claimed invention.

Initially, Li et al. only teaches the use of a spherical lens, more specifically, a spherical achromatic lens, in an illuminator. It is true that comments regarding the use of other types of optics are set out at column 11, lines 26-37 -- in fact, these passages imply that a wide variety of different lenses could be used to achieve the same results as the achromatic lens, including lenses having a diameter as small as 1 mm (! -- see line 28). However, no specific lenses save for the achromat are noted at any point in the specification, including the claims. These comments amount to no more than a "suggestion to try" of the type that has been held to be so vague, indefinite, and nonenabling that they cannot constitute a suggestion for purposes of a PTO anticipation or obviousness rejection:

The admonition that "obvious to try" is not the standard under §103 has been directed mainly at two kinds of error. In some cases, what would have been "obvious to try" would have been to vary all parameters or try each of numerous possible choices until one possibly arrived at a successful result, where the prior art gave either no indication of which parameters were critical or no direction as to which of many possible choices is likely to be successful. E.g., *In re Geiger*, 815 F.2d at 688, 2 USPQ2d at 1278; *Novo Industri A/S v. Travenol Laboratories, Inc.*, 677 F.2d 1202, 1208, 215 USPQ 412, 417 (7th Cir. 1982); *In re Yates*, 663 F.2d 1054, 1057, 211 USPQ 1149, 1151 (CCPA 1981); *In re Antonio*, 559 F.2d at 621, 195 USPQ at 8-9. In others, what was "obvious to try" was to explore a new technology or general approach that seemed to be a promising field of experimentation, where the prior art gave only general guidance as to the particular form of the claimed invention or how to achieve it. *In re Dow Chemical Co.*, 837 F.2d, 469, 473, 5 USPQ2d 1529, 1532 (Fed. Cir. 1985); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1380, 231 USPQ 81, 90-91 (Fed. Cir. 1986), cert. denied, 107 S.Ct. 1606

(1987): *In re Tomlinson*, 363 F.2d 928, 931, 150 USPQ 623, 626 (CCPA 1966).

In re O'Farrell, 7 USPQ2d 1673 (Fed. Cir. 1988). Beyond that, it should be noted that *Li et al.*'s comments still do not specifically teach or suggest use of an aspheric lens.

The fact that *Li et al.* does not truly contemplate alternate optical systems such as the Applicant's is also demonstrated by *Li et al.*'s comments and calculations regarding the diameter of the fiberoptic cable/bundle: while *Li et al.* occasionally make reference to use of multiple fiberoptic cables in the *Li et al.* illuminator (e.g., column 7, lines 21-27), it is evident from the comments and calculations at column 9, line 48-column 10, line 37 that the *Li et al.* illuminator cannot maintain its small size unless cable(s) with an overall diameter of less than approximately 0.5 mm are used. In fact, we believe that *Li et al.* plainly implies that an illuminator such as the Applicant's is not achievable. Column 9, lines 30-37 and line 48-column 10, line 21 of *Li et al.* state that where a single lens is used, the distance *df* between the end of the cable(s) and the lens becomes exceptionally large unless the cable(s) have a very small diameter (0.5 mm or less). However, as noted above, the Applicant has demonstrated the use of a fiberoptic bundle of 2 mm, with a minimum *df* of 6.9 mm. It should be noted that in terms of both light transmission capability and overall size, the Applicant's 2.0 mm cable and 6.9 mm *df* is superior to *Li et al.*'s 0.5 mm cable and 11 mm minimum *df*.

An additional indication that *Li et al.* do not contemplate optical systems such as the Applicant's is demonstrated by the fact that *Li et al.*'s telescoping arrangement artificially constricts the size of the light cone emitted by the end of the cable — in other words, when the lens cap 25 is in the position illustrated in Fig. 1(b), the perimeter of the light cone is obstructed by the lens cap to artificially reduce the spot size (see, e.g., column 4, lines 14-18). It should be apparent to any skilled in the art that this is undesirable since it will result in light loss owing to reflection and absorption within the housing. However, this "irising" arrangement was likely adopted by *Li et al.* in order to obtain a spot having the desired minimum size. By use of the aspheric lens, the Applicant is able to get a comparable small spot without any artificial reduction in the spot size. Since this feature is clearly advantageous, we submit that *Li et al.* would not resort to any artificial constriction in spot size if they knew of any optics that would allow them to do so.

There are several other indirect indicia of nonobviousness as well. It is important to note that apart from *Li et al.*, all other known references teach the use of multiple lenses, mirrors, or prisms to focus light into a well-sized spot; see, e.g., U.S. Patent 3,285,242 to Wallace and U.S. Patent 4,797,736 to Kloss *et al.* Starting with the Wallace invention, it would be expected that skilled artisans would work towards reducing the size and weight of the illuminators. Almost 30 years after the Wallace invention, *Li et al.* was able to achieve an advance in size and weight reduction, as the Applicant did, by constructing an illuminator which only uses a single lens (insofar as the compound-lens achromat can be considered a "single lens"). However, *Li et al.* could only do this by use of a single solid core cable (0.48 mm diameter) with high transmissivity. The Applicant has made an advance by developing a single-lens system which can accommodate cable(s) with greater diameters.

e.g., a 2 mm cable bundle, which in turn allows greater light delivery (and use of more flexible and durable cables). Since neither this system nor the aspheric lens necessary for its practice are taught by *Li et al.* or any other known reference, claims reciting an aspheric lens should be allowable.

Independent Basis for Allowability of Claim 12

The subject matter of claim 12 is noted at page 18, lines 5-8, and page 10, lines 24-27. *Li et al.* make note of filters/polarizers at column 4, lines 28-33, column 7, lines 60-64, and column 11, lines 55-57. However, the statements at column 4, lines 28-33 and column 11, lines 55-57 particularly note the use of polarizers and filters *between the delivery fiber and the lens*, and they do not teach or suggest the attachment bevel that the Applicant's illuminator has.

In the prior art illuminators, polarization/filtration devices are likely located between the end of the fiber and the lens because these prior art illuminators have very large df's when compared to the Applicant's. Addition of a polarizer/filter to the exterior of these illuminators would further increase their effective sizes (i.e., lengths) to unworkable levels, so the polarizer/filter was best placed in the "wasted space" df. The Applicant's illuminator, on the other hand, achieves a df which is sufficiently small that a polarizer/filter can be placed on its exterior without any significant size increase.

Independent Basis for Allowability of Claim 21

The telescoping housing used in the Applicant's illuminator is noted at page 10, line 18-page 11, line 4, and also at page 14, lines 10-29. The integral stops are noted at page 19, lines 22-25. The use of enclosed (i.e., completely covered) threading and integral stops has the advantages that there is lesser chance that the mechanism could be damaged, and there is also lesser chance of fouling or contamination of the threading and/or stops; consider, for example, the situation described at page 11, line 23-page 12, line 6.

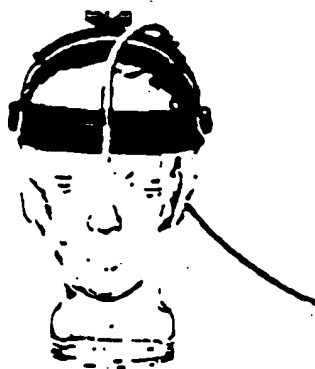
I look forward to speaking to you on Friday.



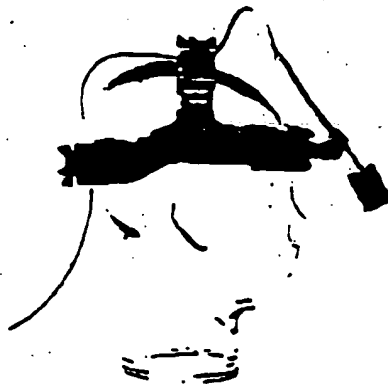
Craig Frieschko (REG. #39,668)

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SEP 10 1996
GROUP 3400

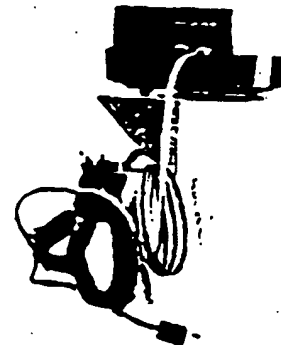
Headlight HEINE MD 350 F. O.



The optical system of the MD 350 F.O. can be positioned precisely between the eyes which permits coaxial illumination and observation lines



The flexible swan neck adapter of the optical system facilitates individual adjustment e.g. to a downward line of illumination to achieve comfortable head position and thus prevent early tiring during work



The combination of the wall support for the projector HK 4000 and the holding device for the headlight forms a practical functional unit

The 100 W projector HEINE HK 4000 is the recommended light source for the headlight, the previous models HK 150-2 endo and HK 150-1 uno, however, are also suitable. Projectors of other manufacturers can be used as via various adaptors

When using the wall support or the mobile stand for the storage of both light source and headlight particularly practical functional units are formed

Order Numbers

J-03.31.220	Headlight HEINE MD 350 F. O.
J-00.31.221	Fiber optics cable and steri-adjustment sleeve included
Y-96.15.100	Steri-adjustment sleeve
Y-96.15.105	Fiber optics projector HEINE HK 4000 (100 W)
Y-96.50.002	Spare lamp included
Y-96.50.003	Wall support for projector HK 4000
	Mobile stand with carrier plate for projector HK 4000
	Support for headlight and other headband instruments (use only in combination with wall support or mobile stand)

Specifications:

Weight: 520 g

Length of fiber optics cable: 250 cm

Field of Illumination

Working distance	Field of Illumination Ø
200 mm	15-55 mm
350 mm	25-110 mm
500 mm	45-150 mm

Adaptor for connection of the headlight MD 350 F. O. to fiber optics projectors of other manufacturers

Projector Manufacturer	Adaptor
Richard Wolf	Order No Y-96.12.103
Sierz	Order No Y-96.12.102
Olympus	Order No Y-96.12.106
Fuji	Order No Y-96.12.118
Pentax	Order No Y-96.12.119

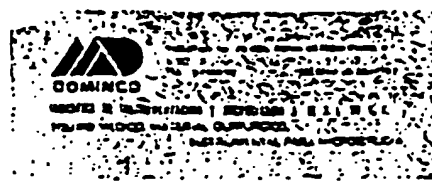
Scheduled delivery date January 1990

The above is subject to technical modification. Errors excepted



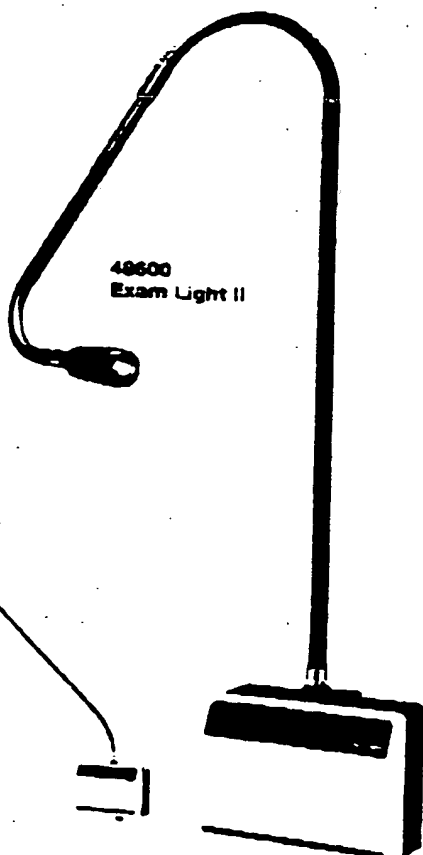
HEINE
OPTOTECHNIK

Your specialised dealer

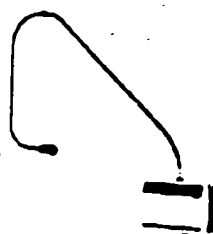


EXHIBIT

C



48600
Exam Light II



48650
Mobile Stand



Exam Light II not
included with stand



Table Mounted Exam Light II

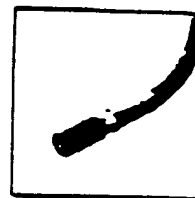
Exam Light II™

- **Halogen light** for true tissue color and consistent, long lasting illumination.
 - **Light Intensity** of 750 footcandles (8070 LUX) of a 4 inch (10.16 cm) spot at 16 inches (40.64 cm).
 - **Color Temperature** is 3200° K for true tissue color
 - **Flexible fiber optic light pipe** for cool distal light.
 - **Compact light head** provides unobtrusive illumination.
 - **Focusing sleeve** gives sharp definition of examination field. Spot size adjusts from 4 inches (10.16cm) to 10 inches (25.4 cm) at 16 inches (40.64 cm).
 - **Non-drift light pipe with 360° rotation** ensures fixed position on any plane.
 - **Noiseless light box** eliminates distraction and can be mounted on wall, table or stand.
 - **Disposable sheaths** available to prevent cross-contamination.
 - **Special light pipe** available for neonatal transillumination.
- No. 48600**—Exam Light II, complete, includes focusing sleeve, mounting bracket and light box. 110-130v, 50/60 Hz for North America. UL listed, CSA certified
- No. 48625**—Same as No. 48600, but **export** (specify country and voltage)* Conforms to IEC 601-1, 220-250v, 50/60 Hz
- No. 48610**—Exam Light II complete, includes fiber optic neonate light pipe and light box. 110-130v, 50/60 Hz for North America. UL listed, CSA certified
- No. 48635**—Same, but **export** (specify country and voltage)* Conforms to IEC 601-1, 220-250v, 50/60 Hz
- No. 48200**—Fiber optic light pipe, length 49.5 inches (126 cm)
- No. 48210**—Fiber optic neonate light pipe
- No. 52640**—Box of 25 disposable sheaths 52 inches (132 cm). Sold to distributor in case quantity only—5 boxes/case
- No. 52641**—Disposable Sheath Dispenser
- No. 48605**—Focusing sleeve
- No. 48830**—Light Box, 110-130v, 50/60 Hz, UL listed, CSA certified
- No. 48835**—Same, but **export** (specify country and voltage)* Conforms to IEC 601-1, 220-250v, 50/60 Hz
- No. 48650**—Mobile stand with locking casters. Height adjustable from 26" to 40". (66 cm to 102 cm)
- No. 48659**—Universal Table Bracket
- No. 04200**—Halogen replacement lamp for Nos. 48600, 48610, 48625 and 48635 (see page 56 for actual lamp size)

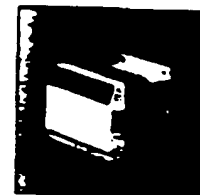
*Export Ordering Example: No. 48625—Philippines—220v



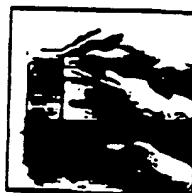
No. 52640
Disposable sheath
52 inches (132 cm)



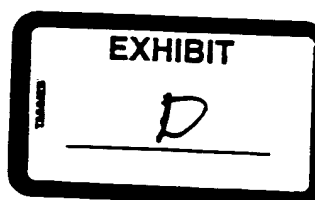
No. 48210
Fiber Optic Neonate
Light Pipe



No. 48659
Universal Table Bracket



No. 52641
Disposable Sheath
Dispenser



GIFFORD, KRASS, GROH, SPRINKLE, PATMORE, ANDERSON & CITKOWSKI, P.C. 280 N. OLD WOODWARD AVENUE, STE 400, BIRMINGHAM, MI 48008-6384 (248) 847-6000

UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

DOCKET # 98-00000
RECEIVED
U.S. DISTRICT COURT
WEST DIST. OF WISCONSIN

OCT - 1 1998

JOSEPH W. SKUPNIEWITZ CLERK

CASE #
J.R. SKUPNIEWITZ
CLERK U.S. DIST. COURT
WEST DIST. OF WIS.

SURGICAL ACUITY, INC.,
d/b/a Orasoptic Research,
Inc.,

Plaintiff,

v.

GENERAL SCIENTIFIC
CORPORATION,

Defendant.

GENERAL SCIENTIFIC
CORPORATION,

Counter-Plaintiff/
Defendant,

v.

SURGICAL ACUITY, INC.,
d/b/a Orasoptic Research,
Inc.,

Counter-Defendant/
Plaintiff,

Case No. 98-C-0457S

Hon. John C. Shabaz

DOCKETED OCT 09 1998

TO CLIENT

ORDER GRANTING DEFENDANT'S
MOTION FOR LEAVE OF COURT
TO FILE AN AMENDED PLEADING

A copy of this document has been
provided to: French

E. Cole

this 15 day of Oct, 1998

At a session of the Court
held via teleconference on
September 2, 1998.

CAK

Deputy Clerk

In consideration of Defendant/Counter-Plaintiff's Motion for
Leave of Court to File an Amended Pleading,

IT IS HEREBY ORDERED that Defendant/Counter-Plaintiff's Motion is
GRANTED, and that the Answer, Amended Affirmative Defenses and Amended
Counterclaim filed therewith be entered and duly considered.

SO ORDERED.

9/30/98

Honorable John C. Shabaz
U.S. District Court Judge



IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

SURGICAL ACUTY, INC.,
d/b/a Orasoptic Research, Inc.

Plaintiff,

v.

GENERAL SCIENTIFIC CORP.,

Defendant.

GENERAL SCIENTIFIC CORP.,

Counter-Plaintiff,

v.

SURGICAL ACUTY, INC.,
d/b/a Orasoptic Research, Inc.,
CHARLES H. CAPLAN, and
FREDERICK N. BUSHROE,

Counter-Defendants.

Civil Action
No. 98-C-0457-S

DOCKETED MAR 19 1999

TO CLIENT

Hon. John C. Shabaz

GENERAL SCIENTIFIC CORP.'S
PRIOR ART NOTICE
PURSUANT TO 35 USC §282

NOTICE is hereby provided in accordance with 35 USC § 282 as to the following items of prior art and/or showing the state of the art that may be relied upon by General Scientific Corp. ("GSC") at trial. This Notice supplements and does not substitute for written notice previously provided by the pleadings, joint pre-trial submission, or otherwise in this Action.

1. Heine Optotechnik Devices (SL 300 F.O. and MD 350 F.O.); Name and Address of Person Having Knowledge Of Those Devices:

Ben St. Jean
2 Rands Lane
Rye, NH

2. Heine Optotechnik Printed Publications: FB000392; Brian Wilt Dep. Ex. 10;
SA000056; Ben St. Jean Dep. Ex. 52.

3. Cogent Light Devices; Name and Address of Person Having Knowledge Of Those
Devices:

Kenneth Li
Cogent Light
26145 Technology Dr.
Santa Clarita, CA 91355-1137

4. Cogent Advertisement from the trade magazine Surgical Product News, as referenced
in the affidavit of Kenneth Li, executed February 17, 1999 (CL-0001).

5. Nagashima headlights - Name and Address of Person Having Knowledge Of Those
Devices:

Frank Kelleher
Kelleher Medical, Inc.
2824 Annwell Dr.
Richmond, VA 23235

6. Nagashima Brochure, Bates Nos. 001515-001518

7. BFW/High-Q/Keeler Fiber-Optic Headlight Illuminator - Name and Address of Person
Having Knowledge Of Those Devices:

Ira Cooper
750 Enterprise Dr.
Lexington, KY 40510

David J. Keeler
456 Parkway
Broomall, PA 19008

8. BFW Advertisement, FB000350-317

9. GSC Halogen Devices: Name and Address of Person Having Knowledge Of Those
Devices:

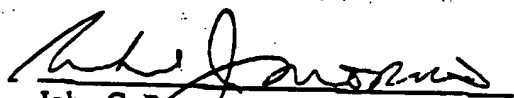
Dr. Byung Jin Chang
General Scientific Corp.
77 Enterprise Dr.
Ann Arbor, MI 48103

- 10. U.S. Patent No. 5,430,620 to Li et al.
- ✓ 11. U.S. Patent No. 5,440,642 to Kim et al.
- ✓ 12. U.S. Patent No. 3,645,254 to Burton
- ✓ 13. U.S. Patent No. 3,666,180 to Coombs et al.
- ✓ 14. U.S. Patent No. 4,274,128 to Malis
- ✗ 15. Other patents on Posa's draft of issues
- o 16. U.S. Patent No. 2,226,941 to Montalvo-Guenard
- o 17. U.S. Patent No. 3,285,242 to Wallace
- o 18. U.S. Patent No. 3,350,552 to Lawrence
- o 19. U.S. Patent No. 3,828,201 to Allen, Sr.
- o 20. U.S. Patent No. 3,951,139 to Kloots
- o 21. U.S. Patent No. 4,104,709 to Kloots
- o 22. U.S. Patent No. 4,234,910 to Price
- o 23. U.S. Patent No. 4,797,736 to Kloots et al.
- o 24. U.S. Patent No. 5,281,134 to Schultz
- o 25. U.S. Patent No. 5,331,357 to Cooley et al.
- o 26. U.S. Patent No. 5,337,735 to Salerno
- o 27. U.S. Patent No. 5,341,513 to Klein et al.
- o 28. U.S. Patent No. 5,348,470 to McGowan et al.
- o 29. U.S. Patent No. 5,355,285 to Hicks
- o 30. U.S. Patent No. 5,381,263 to Nowak et al.

31. U.S. Patent No. 5,384,881 to Miller

Respectfully submitted,

March 18, 1999


John G. Posa
Allen M. Krass
Roberta J. Morris
GIFFORD, KRASS, GROH, SPRINKLE,
ANDERSON & CITKOWSKI, PC
280 N. Old Woodward Ave., Suite 400
Birmingham, Michigan 48009

* * *

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing GENERAL SCIENTIFIC CORP.'S PRIOR ART NOTICE PURSUANT TO 35 USC §282 was served upon:

Mark W. Hetzler
FITCH, EVEN, TABIN & FLANNERY
120 S. LaSalle St.
Suite 1600
Chicago, IL 60603-3406

via Fedex, on this 18th day of March, 1999.

Bryan D. Woods
BRENNAN, STEIL, BASTING & MacDOUGALL, S.C.
22 E. Mifflin St.
Suite 400
Madison, WI 53701-0990

via first class mail, postage prepaid, on this 18th day of March, 1999.

Sheryl L. Hammer

10/2/98



UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

SURGICAL ACUITY, INC.,)
d/b/a Orasoptic Research,)
Inc.,)

Plaintiff,)

v.)

GENERAL SCIENTIFIC)
CORPORATION,)

Defendant.)

GENERAL SCIENTIFIC)
CORPORATION,)

Counter-Plaintiff/)
Defendant,)

v.)

SURGICAL ACUITY, INC.,)
d/b/a Orasoptic Research,)
Inc.,)

Counter-Defendant/)
Plaintiff,)

Case No. 98-C-0457S

Hon. John C. Shabaz

DOCKETED OCT 12 1998

TO CLIENT

DEFENDANT'S ANSWERS
TO PLAINTIFF'S FIRST
SET OF INTERROGATORIES

AS ITS ANSWER, Defendant responds as follows, with each
numbered paragraph corresponding to those of Plaintiff's First Set of
Interrogatories:

Interrogatory No. 1:

Identify the person or persons who designed and/or developed
the Illumination Equipment made, sold and/or marketed by GSC,
including GSC's Surgitel® fiber optic light systems.

Answer

Dr. B. Jin Chang.

GIFFORD, KRASS, GROH, SPRINKLE, PATMORE, ANDERSON & CITKOWSKI, P.C. 280 N. OLD WOODWARD AVENUE, STE 400, BIRMINGHAM, MI 48009-5394 (248) 647-6000

Interrogatory No. 2:

For each of the claims of the '291 patent, describe separately and in detail all differences, if any, between such claims of the '291 patent and all Illumination Equipment made, sold and/or marketed by GSC, including GSC's Surgitel® fiber optic light systems.

Answer

GSC objects to this interrogatory on the grounds that it is overbroad. The claims of the '291 patent are directed to particularized configurations of illumination assemblies incorporating a light guide and an aspheric lens mounted in a specific manner in accordance with the specification, such that a response directed to "all illumination equipment made, sold and/or marketed by GSC" is clearly broader than any coverage allegedly afforded by the claims of the '291 patent. GSC further objects to this interrogatory on the grounds that it seeks a legal conclusion to the extent that it shifts Plaintiff's burden of proving infringement to Defendant.

Without waiving these or other applicable objections, GSC responds to this interrogatory by pointing out that in its illumination equipment, GSC mounts a projection lens with the planar face adjacent the housing base, and not in a manner according to the claims and teachings of the '291 patent. GSC also incorporates a diffuser adjacent the projection lens, such that the light source is not "aligned to illuminate the illumination opening," but rather, is aligned to illuminate this diffuser which, in turn, projects light through the illumination opening.

The differences just described are not intended to be exhaustive of all differences between the claims of the '291 patent

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and equipment available from GSC. Accordingly, GSC reserves the right to supplement its response to this interrogatory with additional information as it becomes known pursuant to further discovery.

Interrogatory No. 3:

Identify all prior art known to GSC or its attorneys relating to Illumination Equipment, and identify each item of prior art, if any, which renders any of the claims of the '291 patent anticipated under 35 U. S. C. §102 and/or obvious under 35 U. S. C. §103.

Answer

GSC objects to this interrogatory on the grounds that it is overbroad. The claims of the '291 patent are directed to particularized configurations of illumination assemblies incorporating a light guide and an aspheric lens mounted in a specific manner in accordance with the specification, such that a response directed to "all prior art ... relating to illumination equipment" is clearly broader than any coverage allegedly afforded by the claims of the '291 patent.

GSC also objects to this interrogatory on the grounds that at least certain of the information requested is already in the possession of Surgical. GSC further objects to this interrogatory on the grounds that a full response to this question would be redundant in view of information already provided to Surgical in the course of these proceedings. Surgical's attention is directed to various papers already of record in this case which set forth prior art known to GSC at this time, as follows:

Defendant's Amended Counterclaim;

Defendant's Motion for Leave of Court to File the Amended Counterclaim; and

Brief in Support of Defendant's Motion for Leave of Court to File the Amended Counterclaim.

Without waiving these or other applicable objections, GSC responds to this interrogatory as follows:

In the 1986 timeframe, Heine Optotechnik began selling a medical/dental illuminator product called the SL 300 F.O., and published a brochure describing this product in October 1986. Since its date of introduction, both the SL 300 F.O. product and a brochure describing the SL 300 F.O. product have been widely distributed throughout the U.S. and elsewhere. The Heine Model SL 300 F.O. includes a light guide in the form of a fiber-optic bundle having an output end and an input end. The input end of the light guide is adapted for connection to a remote illumination source, and the output end of the light guide extends into a housing having a light guide opening and an illumination opening. The output end of the light guide is aligned to illuminate the illumination opening, where there is mounted an aspheric lens. The assembly further includes attachment means for removing the attaching housing to head gear, and the aspheric lens has a diameter of less than two centimeters.

In the 1990 timeframe, Heine began selling a medical/dental illuminator product called the MD 350 F.O., and published a brochure describing that product in 1989. Since its date of introduction, both the 350 F.O. product and the brochure describing the product have been widely distributed throughout the U.S. and elsewhere. The Heine Model

MD 350 F.O. product includes a light guide in the form of a fiber-optic bundle having an output end and an input end. The input end of the light guide is adapted for connection to a remote illumination source, and the output end of the light guide extends into a housing having a light guide opening and an illumination opening. The output end of the light guide is aligned to illuminate the illumination opening, where there is mounted an aspheric lens. The assembly further includes attachment means for removably attaching the housing to head gear. The housing for the Heine Model MD 350 F.O. further includes a housing base telescopically engaged to the housing, wherein the output end of the light guide is attached to the housing base to provide an adjustable relationship between the output end and the aspheric lens. The light guide opening and the illumination opening are both generally circular and are coaxial. The attachment means comprises a clip pivotably mounted on the housing.

Welch Allyn introduced a head lamp illuminator called the WA 46003 over 30 years ago. The WA 46003 head light product is an illumination assembly which is removably attachable to a head band (Model No. 460167-501). Beginning in September, 1993, Welch Allyn began to market an exam light called the Model WA 48600. The Model WA 48600 exam light is an illumination assembly which utilizes a light guide in the form of a fiber-optic light pipe (Model 48200). The exam light includes a housing (Model 488400) having an opening for the light guide, and an aspheric lens (part Nos. 488403 and 488404). The housing base of the housing moves to adjust the aspheric lens with respect to the housing into which the fiber optic light guide is inserted.

The prior art just described is not intended to exhaustive of all prior art material and relevant to the '291 patent. Accordingly, GSC reserves the right to supplement its response to this interrogatory with additional information as it becomes known pursuant to further discovery.

Interrogatory No. 4:

Describe in detail how each element of every claim of the '291 patent is disclosed or taught by each item of prior art identified by GSC in response to Surgical's Interrogatory No. 6 and, if not identified, by U.S. Patent Nos.: 3,666,180; 4,274,128; 4,952,040; 4,718,744; 5,440,462 and 5,485,316.

Answer

GSC objects to this interrogatory on the grounds that it cannot be understood the way it is written. The interrogatory requests that GSC "[d]escribe in detail how each element of every claim of the '291 patent is disclosed or taught by each item of prior art identified by GSC in response to Surgical's Interrogatory No. 6", whereas Interrogatory No. 6 asks GSC to identify each person who GSC expects to call as an expert witness.

GSC also objects to this interrogatory on the grounds that at least certain of the information requested is already in the possession of Surgical. GSC further objects to this interrogatory on the grounds that a full response to this question would be redundant to information already provided to Surgical in the course of these proceedings. Surgical's attention is directed to various papers already of record in this case which set forth prior art known to GSC

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at this time, as follows:

Defendant's Amended Counterclaim;

Defendant's Motion for Leave of Court to File the Amended Counterclaim; and

Brief in Support of Defendant's Motion for Leave of Court to File the Amended Counterclaim.

With specific reference to the patents referenced by this interrogatory, these are representative examples of prior art which clearly shows that the use of aspheric lenses is notoriously well known in a variety of applications, including surgical/medical/ dental illuminators of the type considered by the '291 patent. This list of prior-art references is not intended to be exhaustive, and additional domestic and/or foreign patents or other references unknown to GSC at this time may become available through further searches.

U.S. Patent No. 3,666,180 teaches that it was known nearly three decades ago to use an aspheric lens in conjunction with a dental illuminator. Although this particular system utilizes a lighting source in the form of an incandescent bulb, it would be readily apparent to a skilled practitioner to utilize the output of a fiber as an alternative light source. The aspheric lens is designated with numerical reference 26 (col. 2, line 8 of the '180 patent). This patent was not cited during prosecution of the '291 patent.

U.S. Patent No. 4,274,128 discloses an early use of an aspheric lens in conjunction with a fiber-optic light source. Reference is made to the optical fiber 28 of Figure 10 entering the housing 128, noting that "the particular lens system utilized is determined by such factors as the focal distance, resolution and

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magnification desired. For example, where high resolution is required, achromatic or aspheric lenses will be utilized." (Col. 6, lines 55-58, emphasis added.) This patent was not cited during prosecution of the '291 patent.

U.S. Patent No. 4,952,040 teaches the use of a wide variety of aspheric lenses coupled to optical fibers in endoscopes, which constitutes an analogous field of endeavor relative to the subject matter of the '291 patent. Figures 2, 10 and 13-39 illustrate different variants on the use of aspheric lenses coupled to an optical fiber bundle, complete with ray-tracing diagrams in each case. This patent was not cited during prosecution of the '291 patent.

U.S. Patent No. 4,718,744 teaches the use of an optical fiber coupled to an aspheric lens, in this case for use in a light-coupling arrangement. This patent, which was not cited during prosecution of the '291 patent, shows that the use of aspheric lenses coupled with optical fibers is not limited to their use in medical/surgical/dental systems, but is used in a wide variety of various applications, leading in part to the notoriety of their applicability to different situations.

U.S. Patent No. 5,440,462 was filed by Defendant/Counter-Plaintiff General Scientific Corporation on April 6, 1994, which is more than one year prior to the filing date of the '291 patent. GSC's '462 patent is directed toward a compact, lightweight, head-mounted illumination assembly for producing a uniform, intense and adjustable light beam. The illumination assembly may be easily mounted upon the head of a user, either on the head band or a spectacle frame. The illumination systems includes a unique optical subassembly consisting

of a low-pass heat filter, a low scatter-angle diffuser, and an aspheric projection/focusing lens disposed along an optical axis in line with a light source.

Although the optical subassembly taught by the '462 patent may be used in conjunction with a conventional filament lamp illumination source to produce a readily adjustable, yet uniform and intense beam of light, it would be apparent to one of ordinary skill to replace the filament lamp with an optical fiber having an output end and in end, with the input end being adapted for attachment to a remote light source, and with the output end extending into the adjustable housing, as clearly taught therein. As with the other prior art identified in this response, the '462 patent was not cited during the prosecution the '291 patent and, indeed, nor were any product brochures of any kind submitted to the Patent Office, including those widely available and distributed from both Plaintiff and Defendant in this case.

U.S. Patent No. 5,485,316 resides in an illumination optical system for endoscopes. An endoscope, which is a lighting assembly typically based upon a flexible light pipe such as a fiber-optic bundle, is well known for medical and dental applications, and would be considered analogous art relative to the subject matter of the '291 patent. As discussed at column 5 of the '316 patent, a first type of illumination optical system according to the invention disclosed therein comprises a light emitting source and an illumination lens system which includes a positive lens component for directing a light bundle emitted from the light source toward an object, wherein at least one lens component has an aspherical surface. The specification

goes on to describe various other ways in which aspherical lenses may be utilized in fiber-optic-based illumination assemblies applicable to medial and dental fields of endeavor. The '316 patent was not cited during prosecution of the '291 patent.

Interrogatory No. 5:

Describe the level of ordinary skill in the relevant art as of May 1995, and identify all documents and things that show or describe the level of ordinary skill in such art.

Answer

GSC objects to this interrogatory on the grounds that it incomprehensibly. The question asks GSC to "describe the level of ordinary skill in the relevant art as of May 1995 ..." without identifying which art this interrogatory is directed. If Surgical would amend this question to be more specific, GSC will consider an appropriate response thereto.

Interrogatory No. 6:

Identify each person who GSC expects to call as an expert witness at trial and provide the information required by Fed.R.Civ.P. 26(a)(2).

Answer

GSC has not yet fully compiled its list of expert witnesses, but will provide such information to Surgical pursuant to the Court's scheduling order and the Federal Rules of Civil Procedure.

Interrogatory No. 7:

Identify the person or persons who are most knowledgeable regarding the marketing and sales of Illumination Equipment made, sold and/or marketed by GSC, including GSC's Surgitel® fiber optic light systems, and made, sold and/or marketed by others, including Heine Optotechnik and Welch Allyn.

Answer

GSC objects to this interrogatory on the grounds that it is overbroad. The claims of the '291 patent are directed to particularized configurations of illumination assemblies incorporating a light guide and an aspheric lens mounted in a specific manner in accordance with the specification, such that a response presumably directed to all of GSC's illumination equipment would be clearly broader than any coverage allegedly afforded by the claims of the '291 patent. Without waiving this or other applicable objections, GSC responds to this interrogatory by stating that B. Jin Chang would be most knowledgeable regarding the marketing and sales of GSC's surgical fiber-optic light systems. GSC does not know who is "most knowledgeable" with respect to illumination equipment made, sold and/or marketed by others, including Heine Optotechnik and Welch Allyn.

Interrogatory No. 8:

State GSC's profits from the sale of the Illumination Equipment made, sold and/or marketed by GSC, including GSC's Surgitel® fiber optic light systems, by stating separately for each different product style, type, model or other designation: (1) the number of

each sold per year; (2) the number of each in inventory; (3) the sales price for each; (4) GSC's gross revenue resulting from the sale of each; (5) GSC's cost of each; and (6) any other costs GSC intends to deduct to calculate GSC's profits for each.

Answer

GSC objects to this interrogatory on the grounds that it is overbroad. The claims of the '291 patent are directed to particularized configurations of illumination assemblies incorporating a light guide and an aspheric lens mounted in a specific manner in accordance with the specification, such that a response presumably directed to all illumination equipment made, sold and/or marketed by GSC is clearly broader than any coverage allegedly afforded by the claims of the '291 patent.

GSC also objects to this interrogatory on the grounds that it seeks highly confidential and/or trade secret information. GSC reserves the right to reconsider its response to this interrogatory once a mutually agreeable Protective Order has been adopted and entered in this case.

Interrogatory No. 9:

State the date on which GSC first became aware of Surgical's Illumination Equipment, including Surgical's Surgitel® fiber optic light system, and the '291 patent.

Answer

GSC objects to this interrogatory on the grounds that it is vague. The expression "Surgical's illumination equipment" is ill-defined. Without waiving such objection, GSC responds to this

interrogatory by stating that it first became aware of the '291 patent on when it was served with a copy of the Complaint filed in the United States District Court for the Western District of Wisconsin, Case No. 98-C-0457S.

Interrogatory No. 10:

State whether GSC has sought, requested or obtained an opinion regarding whether any of GSC's products infringe or would infringe any of the claims of the '291 patent, whether any one or more of the claims of the '291 patent are invalid and/or whether the '291 patent is unenforceable, including when such opinion was sought or requested, identify the person or persons from whom it was sought or requested and when, if at all, an opinion was obtained.

Answer

GSC objects to this interrogatory on the grounds that it seeks information immune from discovery under the attorney-client privilege.

Interrogatory No. 11:

Describe in full detail GSC's contention, and all underlying factual bases, that the '291 patent is unenforceable due to inequitable conduct, including in such description the identification of all prior art allegedly withheld, the materiality of each identified piece of prior art, the identification of the individual or individuals that allegedly withheld such prior art and the basis, if any, for asserting that such conduct was done with the intent to deceive the Patent Office.

Answer

GSC objects to this interrogatory on the grounds that it is overbroad and burdensome. For the record, it is noted that this interrogatory contains five subparts, which GSC identifies as follows:

- a) that the '291 patent is unenforceable due to inequitable conduct;
- b) a description and the identification of all prior art allegedly withheld;
- c) the materiality of each identified piece of prior art;
- d) the identification of the individual or individuals that allegedly withheld such prior art; and
- e) the basis, if any, for asserting that such conduct was done with the intent to deceive the Patent Office.

Given this breakdown of the various subparts, GSC responds to each as follows:

a) Individuals associated with the filing of prosecution of a U.S. patent are under an affirmative duty to disclose information material to patentability under 37 C.F.R. §1.56. Accordingly, any information pertaining to the subject matter of any of the issued claims of the '291 patent would be considered material insofar as they would have a direct bearing on patentability.

b) Various patents and other references containing material information were available and, upon information and belief, known to Surgical during the prosecution of the '291 patent, including various descriptions and data sheets of commercially available products and U.S. Patent No. 5,440,462 owned by GSC, which describes the use of an aspheric lens in a medical/dental illuminator. In

addition to this patent, U.S. Patent Nos. 3,666,180; 4,274,128; 4,952,040; 4,718,744; and 5,485,316 set forth the use of aspheric lenses in the same and similar fields of endeavor, including medical/dental illuminators wherein a light guide in the form of an optical fiber is coupled to an aspheric lens. In addition, several competitors of Surgical began marketing and selling medical and dental illumination equipment incorporating aspheric lenses prior to the issuance of the '291 patent, and, upon information and belief, Surgical was aware of such commercial uses during the prosecution of the '291 patent, but failed to bring this information to the attention of the U.S. Patent Office, thereby breaching its duty of candor. These competitors of Plaintiff/Counter-Defendant include Heine Optotechnik, which began selling a fiber-optic base, head-mounted illuminator called the 300/350 F.O. incorporating an aspheric lens prior to 1990, and Welch Allyn, which introduced a fiber-optic based medical/dental illuminator as early as 1993.

c) Such information would, without question, include information pertaining to the use of aspheric lenses in any type of illumination assembly directed toward medical/surgical/dental applications.

d) Those having a duty to disclose material information during the prosecution of a U.S. patent includes "individuals associated with the filing and prosecution" of the '291 patent under 37 C.F.R. §1.56. Such individuals include each inventor named in the application, each attorney or agent who prepares or prosecutes the application, and every other person who is substantively involved in the preparation or prosecution of the application and who is

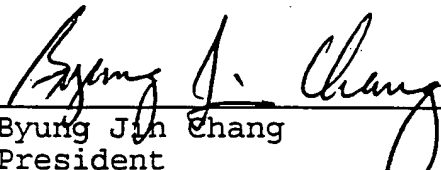
associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. In addition, individuals other than the attorney, agent or inventor may comply with the section by disclosing information to the attorney, agent or inventor, under 37 C.F.R §1.56(d).

GSC reserves the right to amend and/or supplement its response to this interrogatory as further information becomes available pursuant to additional discovery. At the present time, however, GSC is informed, and on the basis alleges, that Surgical has conducted numerous evaluations and comparisons of competitive products, including the products of GSC and/or medical/ dental illuminators incorporating aspheric lenses. In addition, it is noted that this not the first dispute between the parties, and that, several years ago, litigation took place between Orasoptic and General Scientific Corporation. This litigation, also involved discovery and a considerable exchange information, wherein GSC provided Surgical with product descriptions and data sheets specifying the use of aspheric lenses and other features material to the claims of the '291 patent to Surgical.

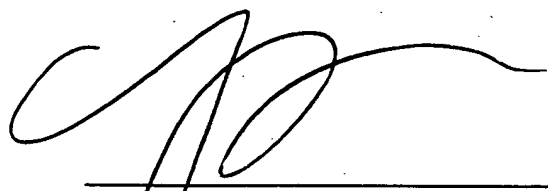
e) It is clear that Surgical's intent was to receive a U.S. patent where, if it had disclosed the material information it had in its possession, it would have become problematic and, no doubt, impossible. Given the history of antagonism between the parties, certain of which has involved the same Court as the present dispute, it is apparent that Surgical obtained the '291 patent in silence as these material teachings so that it could, once again, attempt to obtain a competitive advantage over GSC through its malicious use of

wrongfully obtained intellectual property. Again, GSC reserves the right to amend and/or supplement its responses to each and every subpart of this and all other interrogatories as further information becomes available pursuant to additional discovery.

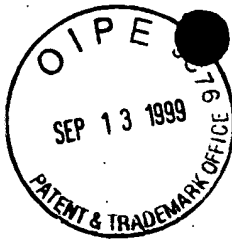
Date: 10/7/98


Byung Jin Chang
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CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing DEFENDANT'S ANSWERS TO PLAINTIFF'S FIRST SET OF INTERROGATORIES, DEFENDANT'S RESPONSES TO PLAINTIFF'S FIRST REQUEST FOR PRODUCTION OF DOCUMENTS AND THINGS, and PLAINTIFF'S OBJECTIONS TO SCHEDULE A OF PLAINTIFF'S NOTICE OF DEPOSITION UNDER FED.R.CIV.P. 30(b)(6) served upon:

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via first-class mail, postage prepaid, on this 7th day of October 1998.



Sheryl L. Hammer